

1 The surface of the display area provided for the presentation of
miscellaneous user information is advantageously small compared with the total
display surface or the surface of the display area provided for the presentation of
(multimedia) communications information. As such, in the absence of
5 communications information which is to be presented, the power consumption can
be reduced according to this surface ratio. In particular, in the absence of
communications information which is to be presented, only the display area
provided for the presentation of miscellaneous user information is regularly
refreshed.

10 The display is advantageously designed in the form of an alphanumeric,
active-matrix liquid crystal color display.

With the aid of the present invention, high-resolution color displays (video
displays) can be operated in a power-saving or energy-saving manner, since only a
partial surface (for example, the upper, lower or lateral edge of the display) is made
15 available for the presentation of miscellaneous user information (e.g., status
information), which does not correspond to multimedia communications
information which is transmitted during a communications link to the mobile
communications terminal. If the standby mode is ended and multimedia
communications information is available and is to be presented on the terminal
20 display, the entire terminal display is refreshed and, in normal mode, the
multimedia communications information is presented on one display area and the
miscellaneous user information, e.g. the battery level or the like, is presented on the
other display area.

Additional features and advantages of the present invention are described in,
25 and will be apparent from, the following Detailed Description of the Preferred
Embodiments and the Drawings.

DESCRIPTION OF THE DRAWINGS

Fig. 1 shows a simplified block diagram of a mobile communications
terminal according to the teachings of the present invention;

Fig. 2a and Fig. 2b show presentations of the status of the display of the mobile communications terminal shown in Fig. 1 in standby mode and normal mode; and

Fig. 3 and Fig. 4 show display conditions in standby mode according to variants of the preferred embodiment explained with reference to Fig. 1 and Fig. 2.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Fig. 1 shows a simplified block diagram of a preferred embodiment of a mobile communications terminal according to the present invention. This terminal includes an antenna 1, a transmit unit 2 and a receive unit 3, which collectively form the air interface of the terminal and are used to set up a communications link with a base station of the corresponding mobile radio network. The transmit and receive units 2 and 3 are connected to a frequency converter 5 and a unit 6 for digital signal processing of the communications information which is to be transmitted or received. A unit 7, which acts as the interface between the mobile terminal and a user of the mobile terminal (man-machine interface), is connected to the unit 6. In particular, a keypad 8 and a microphone 9 are connected to the man-machine interface 7 to enter information, and also one connected to a loudspeaker 10 and a display 13 to output information. The display 13 is controlled by a display controller 11. A unit 4 is connected to the internal structure of the mobile terminal to supply power to the entire mobile terminal. The unit 4 also may have a battery voltage regulator to maintain the supply voltage at a constant level. The aforementioned mobile terminal components, as shown in Fig. 1, correspond to the intrinsically customary components of conventional mobile telephones which, therefore, do not need closer examination at this point.

However, a special feature of the present invention is the design of the display 13, which is provided in particular in the form of a color display; for example, an active-matrix liquid crystal color display. The display 13 is designed in such a way that it serves not only to display multimedia communications information which is received by the receive unit 3, for example, in particular while a communications link exists, but also to present miscellaneous user information

which is not communications information in the true sense and which, for example, provides information on specific conditions of the mobile terminal. For this purpose, the display surface of the display 13 is divided into two partial areas, the first partial area being provided exclusively for the visual presentation of the
5 aforementioned (multimedia) communications information, whereas the second partial area is provided in particular for the visual presentation of miscellaneous user and status information. The display controller 11 is designed according to the present invention in such a way that, if no communications information is to be presented (for example, in standby mode), it activates and regularly refreshes only
10 the aforementioned second partial area of the display surface 13 in order to present the aforementioned miscellaneous user information, whereas the first partial area provided for the presentation of communications information is deactivated. The first partial area remains deactivated until communications information to be presented occurs once more, having been obtained during a multimedia
15 communications connection (e.g., videotelephony, Internet retrieval). In this case, the entire display surface of the display 13 is activated and refreshed so that, in the present case, both the aforementioned user information and status information and the multimedia communications information are presented in the corresponding partial areas of the display 13. This will be explained in detail below with reference
20 to the presentations shown in Fig. 2.

Fig. 2a shows a typical structure of the display 13. The display 13 is particularly structured in the form of a matrix and includes a number of pixel lines 14, some of which are allocated to the partial area 16 for the presentation of multimedia communications information, while others are allocated to the partial
25 area 15 for the presentation of miscellaneous user and status information. Fig. 2a shows, in particular, the condition of the display 13 when the corresponding mobile communications terminal is in standby mode; i.e., it shows the case in which there is no multimedia communications information to be presented. In this case, only the pixel lines corresponding to the partial area 15 are activated and in cyclically
30 refreshed by the display controller 11 shown in Fig. 1, whereas the pixel lines of the